OIPE
SEP 19 2005
PATENT & TRADEMARK OFFICE
IAP8

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On 9/16/05

TOWNSEND and TOWNSEND and CREW LLP

By:

PATENT
Docket No.: 09623C-036300US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Denis O'Keeffe et al.

Application No.: 09/978,306

Filed: October 15, 2001

For: MOUSE WITH INTEGRATED KEYPLATE AND HOUSENG

Examiner: Tom V. Sheng

Art Unit: 2673

DECLARATION
under 37 CFR § 1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

We, the undersigned inventors, declare as follows:

1. We are the two co-inventors of invention of the above-referenced patent application.

2. We understand that in an Office Action mailed March 18, 2005, certain of the claims have been rejected as anticipated and unpatentable over Su U.S. Patent No. 6,791,533, filed June 28, 2002 and Johnson U.S. Patent No. 6,844,873 filed March 9, 2001.

3. Prior to March 9, 2001, we conceived of, and worked diligently subsequent to conception to reduce to practice, the invention disclosed and claimed in the relevant claims of the above-referenced application as evidenced by the following:

- Exhibit A is a photocopy of a picture of a drawing of the invention dated November 3, 2000. The drawing is countersigned by the inventor's colleges.
- Exhibit B is a technical drawing of the invention dated January 12, 2001.
- Exhibit C is a design analysis of the invention dated January 16 and generated January 16, 2001.
- Exhibit D is functional product analysis of the invention dated January 25 and generated January 25, 2001.
- Exhibit E is a set of technical drawings of the invention dated January 26, 2001.
- Exhibit F is a test schedule for the invention dated January 30 and generated January 30, 2001.
- Exhibit G is a set of minutes from a design review meeting for the invention dated January 30, 2001.
- Exhibit H is a set of drawings of the invention dated February 2, 2001.

- Exhibit I is a mechanical engineering task list for fabricating the invention dated February 19 and generated February 19, 2001.

- Exhibit J is a set of technical drawings for the invention dated February 2, 2001.

- Exhibit K is a set of technical drawings for the invention dated February 20, 2001.

- Exhibit L is an offer to manufacture the invention dated March 3, 2001.

- Exhibit M is a technical manufacturing specification for the invention dated March 13, 2001.

- Exhibit N is an information disclosure statement for preparing a patent application for the invention and includes photocopies of photographs of the manufactured invention dated May 22, 2001.

4. We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dated Sept 13 05

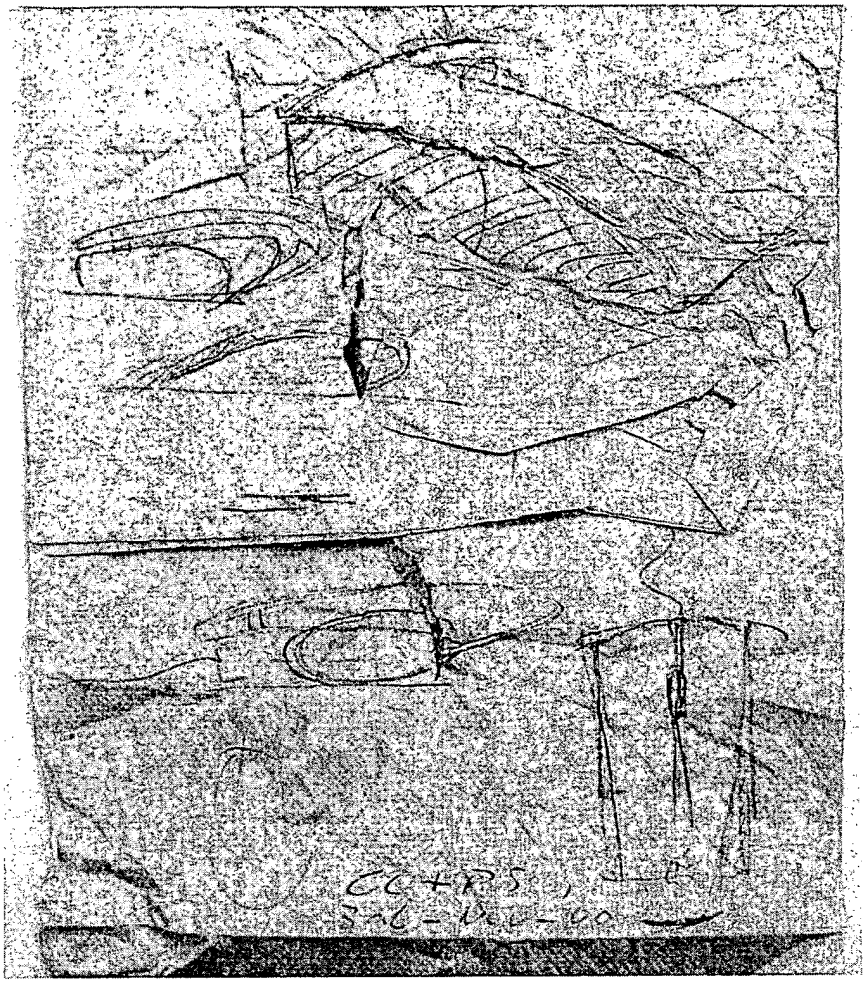
Denis O'Keeffe

PATENT

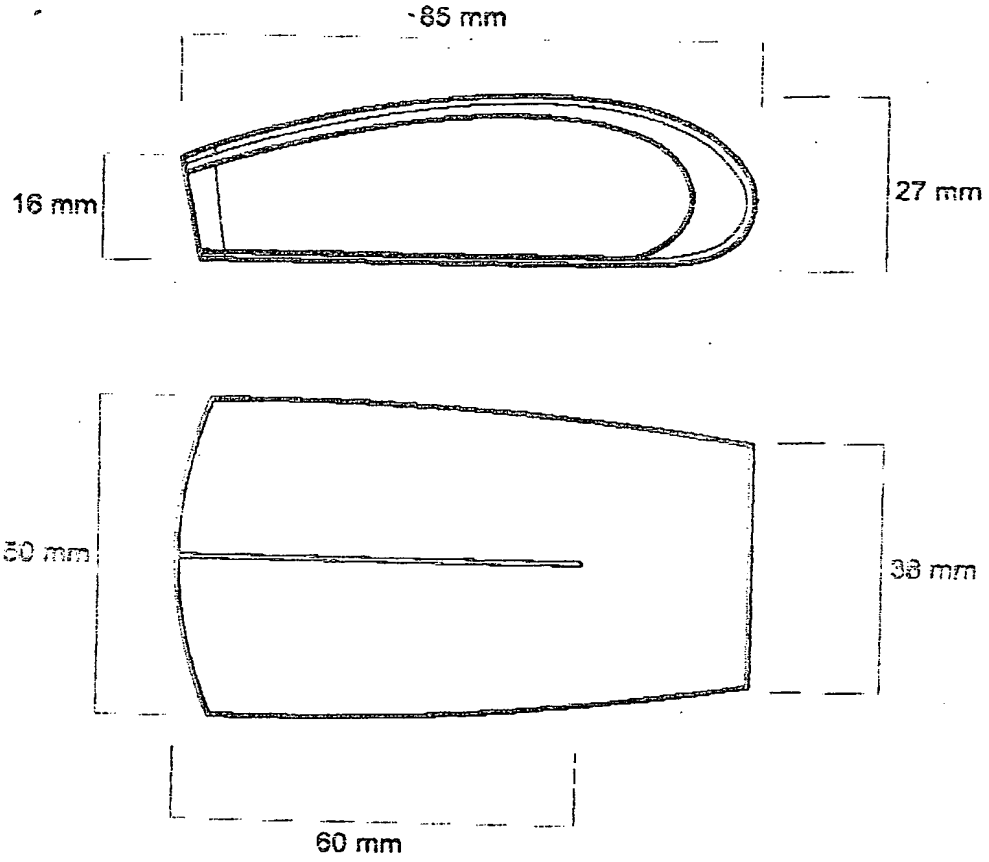
Dated 13/9/05

Neil O'Connell.
Neil O'Connell

Exhibit A



Logitech Mini Mouse 12-01-01



designpartners

REVIEW WITH DAVID + CHRISTOPHE JAN 25th

Machu Response Form

Logitech CONFIDENTIAL

A Response to : functional product analysis

Author: Neil O'Connell **Date:** 09:18 AM Yesterday

Key Thought: **Resultant failure modes**

ACTIVE

The following failure modes can be identified from Christophe's functional analysis.

part / link	functions	Failure mode
• metal foil	• Is the key plate • Cosmetic aspect • rigidity and mechanical resonance vibration (playing with a graduated ruler on a table)	**Cosmetic failure** • key gap not consistent, closes together or diverges • key edges do not match corners of plastic case • key 'twangs', not rigid enough • sharp edges could harm the user **Functional failure** • switches pre-actuated • inconsistent actuation forces **Assembly failure** • Metal foil permanently deforms during assembly **Environment interaction** • coupling of ESD or EFTB perturbations • corrosion dependaing on material (humidity) • temperature could introduce mechanical forces through dilation • drop sensitive - getting marked • lifted through the user
• bottom case	• contains all internal component • close the bottom of the device • assembly of the metal foil • assembly support for the lens and sensor part • cable exit • ESD protections • interface with the top case. •	**Assembly failure** • ID too small to contain all components • Metal foil difficult to assemble • Metal foil takes too long to assemble • Difficult to assemble top case to base unit • Actuator damage resulting for assembly of metal foil to base unit • not appropriate assembly reference leading to stacking tolerances issues **Functional failure** • Metal foil not located rigidly enough • Metal foil 'works loose' with use • Gap from desk to sensor inconsistent

		• ESD gap too short • Inconsistent actuation force **Cosmetic failure** 'Chafe' marks at cable exit on soft material **Environment interaction**
• pads	• easy gliding of the mouse on various surfaces • assure flatness of the device • avoid rocking of the device • impact distance table to sensor	**Cosmetic failure** Movement of mouse across surfaces feels coarse or 'not smooth' Mouse 'rocks' **Functional Failure** Gap from desk to sensor inconsistent Senor alignment with table not consistent (angle) **Environment interaction**
• foil assembly parts	• determine the assembly of the foils to the bottom case • position of the foil in both X and Y direction as well as angular position • assure flatness and parallelism of the foil with the bottom case	**Assembly failure** Metal foil permanently deforms during assembly Metal foil not located rigidly enough Metal foil 'works loose' with use **Cosmetic failure** key gap not consistent, closes tobether or diverges key edges do not match corners of plastic case Gap between base unit top surface and underside of metal plate 'looks wrong'
• lens	• Optical function to guide the light from the LED to the table and back to the sensor	**Functional Failure** Inconsistent pattern detected by sensor
• sensor	• measurement of the XY displacement	
• PCB / PWA	• Assembly of the various component like • LED and Sensor • Switches	**Functional Failure** may have a major impact in position of key component like sensors or switches that may results in bad resolution or bad switch feeling rupture is depanelisation - loss of electrical contacts **Assembly Failure** PTH component or SMD component in conflicts **Cosmetic Failure**
• switches	measurement of the key clicking	**Functional Failure**

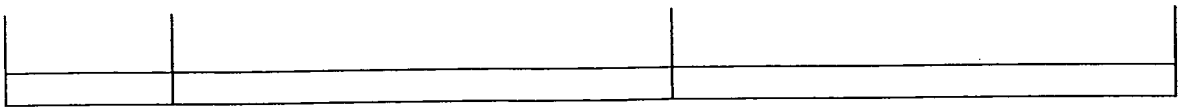
		resistance to drop, metal plate may not be possible to be stopped before end of switch travel. **Assembly Failure** various switches may have various mechanical tolerances. carefull with substitue and part definition **Cosmetic Failure** If preloading, could initiate misalignment at keyplate
• top case	protection of the devices internal components assembly of the SSR ? limit travel of the metal foil ESD protection Cable exit	**Functional Failure** **Assembly Failure** **Cosmetic Failure** **Environment interaction**
• SSR module	measure of the scrolling ESD proof	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
• cable	assure link with the PC	**Functional Failure** May touch the table and lift the device - user comfort decreased Connection not proof - rutpure in usage EMI, EFTB, ESD performance not in specification

L1	interface bottom case - metal foil need to define the positioning of the foil in XY direction, angular and parallelism (rocking of the device) gap bottom case (vertical assembly) - will impact the travel of the key's - impact distance sensor to table. is key for all cosmetic aspect and for the key travel length	**Functional Failure** **Assembly Failure** positioning of the foil in X,Y , rotation or in stack not in specification. Stacked tolerance for the switches and metal foil would lead to bad switches feeling **Cosmetic Failure**

		Functional Failure
L2 L3	assembly of the bottom case with the metal foil through ??? needs to assure mechanically the assembly of the two parts no play of the metal foil !! should not interfere with the friction surface table - pads	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L4	assembly of the pads to the right surface for assembly and tolerance specification of the sensor to table distance. needs to stay in place (gluing on metal ??)	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L5	for reference only - table to pad gliding interface - should be as free as possible and no rocking	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L6	lens bottom case assembly. will determine the distance sensor to table. perpendicularity of the light path to the table also. interface to be designed for appropriate sensor performance	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L7	interface sensor to lens. Determine the appropriate sensor position to the lens for an adequate positioning	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L8	Electrical connection of the sensor to the PCB.	**Functional Failure** **Assembly Failure**

		Cosmetic Failure
L9	Connection and positioning of the switches on the PCB	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L10	Metal foil interaction on the switches. Should be gap free - gap is determined based on L9-L8-L7-L6 or L9-L19	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L11	top bottom case assembly closing the enclosure maintain of the cable determine the placement of the SSR compared to the metal foil through L12-L11-L1 (L13 virtual link)	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L12	Assembly of the SSR in the top case - detail study to be done	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L13	virtual link positioning of the SSR compared to the metal foil. parallelism and edges to be respected sensor should be usable without action on metal foil / switches	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L14	virtual link related to the gap between the metal foil	**Functional Failure**

	and the top case. Cosmetic issues of alignments.	**Assembly Failure** **Cosmetic Failure**
L15	cable assembly	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L16	cable fixture through top case for traction on the cable	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L17	cable fixture through bottom case for traction on the cable	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L18	Connection or link of the SSR module - ESD protection included	**Functional Failure** **Assembly Failure** **Cosmetic Failure**
L19	possible support of the PCB on the bottom case - hyperstatic issues and EE component interference issues possible.	**Functional Failure** **Assembly Failure** **Cosmetic Failure**



Machu Project Discussion

Logitech CONFIDENTIAL

Author: Neil O'Connell **Date:** 30/01 18:11

Concerned People: All

Category: Machu - ME Homepage **SubCategory:** Testing

Subject: Test Schedule

NOT COMPLETED

Proto ASSY = .

Using Proto ASSY.
Measure Key Forces.
Conduct std Env test.
Measure Force.
Post Results.

Test List

	Test Type	Purpose of test	Process	Owner	Results	Start date	Finish date	Completion date
1	Environmental	Determine if metal will deform.	Plastic Vacuum cast, ~~First shots~~, ~~POP units~~ hand made metal.	SM				
2	Salt spray	Corrosion of metal	~~Steel, Stainless steel,~~ Aluminium Pad Print anodised.	SM				
3	Drop test		~~Steel, Stainless steel,~~ Aluminium	SM				
4	Deformation behaviour	To determine the amount of deformation that may occur in our standard drop test.	~~Steel, Stainless steel,~~ Aluminium	Neil		March 23 2001	March 28 2001	Completed
5	Stress analysis	To determine the amount and position of stress concentrations that may occur in our standard drop test.	Steel, Stainless steel, Aluminium	Neil		March 23 2001	March 28 2001	Completed
6	Drop test simulation	To determine possible issues that may arise from our	~~Steel, Stainless steel,~~ Aluminium	Neil		March 23 2001	March 28 2001	Completed

Compare colour before + after.

Proto assy.

~~Vacuum cast sla~~

Sla copy + hand made metal. any + PCB.

		standard drop test.						
7	**EFTB** Rdo.	Mouse wrapped in a metal panel may have implications for it's EE performance. This test is to determine if this may happen by wrapping a similar mouse (Cuzco) and testing	Cuzco with metal panel wrapped around, SLA, Vacuum casting, first shots	Christophe				Completed March 03 2001
8	Rdo. **ESD**		SLA, Vacuum casting, first shots	Christophe				
9	**EMI**			Christophe				
10	**Cable bending test**	To determine the life of the cable in use	~~Sample cables~~, SLA, ~~first shots~~					
11	**Switch Actuation Force Test**	To determine the life of the switches in use	Machined fixture(steel), Stainless steel	Martin		Mar 30 2001		complete.
12	**Logo wear test**	To determine the life in use of the Logo	Aluminium test pieces and pad printing consumables					
13	**Logo print test**		Aluminium test pieces and pad printing consumables					
14	Anodising wear.							
15								
16	Anodising adh							
17								
18	SW liftest 2.							
19								

Test Schedule

New meeting request from SM Lin

Begins:	01/30/2001 09:00 AM Local Time
Ends:	01/30/2001 10:00 AM Local Time
Title:	Machu ID concept review meeting
Location:	114/TW-Hsinchu
Chair:	SM Lin/TW/AP/LOGITECH
To (required):	Christophe Dayer/CH/EU/LOGITECH@LOGITECH, Denis O'Keeffe/IE/EU/LOGITECH@LOGITECH, Jack Hung/TW/AP/LOGITECH@LOGITECH, ~~Jean-Claude Etter/CH~~EU/LOGITECH@LOGITECH, ~~Jean-Luc Dupraz/CH~~/EU/LOGITECH@LOGITECH, Jon Miller/CA/US/LOGITECH@LOGITECH, Michael Lu/TW/AP/LOGITECH@LOGITECH, Neil O'Connell/IE/EU/LOGITECH@LOGITECH, peter@designpartners.ie
cc (optional):	Mike Chiang/TW/AP/LOGITECH@LOGITECH Yves Karcher/CH/EU/LOGITECH@LOGITECH

Description

Machu concept development review meeting notice.

- Date: 1/30/2001 (this tuesday)
- Time: 9:00 am (IRL- Cork/Bray)
 10:00 am (Romanel)
 01:00 am (Fremont)
 05:00 pm (TWN)
- Meeting room (TWN): #114 (ext: 886-2818)
- Attendees invited:
 Cork (IRL): Denis, Neil,
 Bray (IRL): Peter (DP)
 Romanel: Christophe, Jean-Luc, Jean-Claude
 Fremont: Jon Miller
 TWN: Michael Lu, Jack, SM

 Note: SM will dial Peter, Denis and Christophe to start the meeting.
 Jon, please dial in TWN ext: 886-2818 then, if you will join. Sorry again on late hour for Fremont site!

- Agenda:
 1. To update quickly current ID concept status from last wednesday's review meeting in Fremont. - Peter
 2. To review/discuss together for feedbacks/inputs. All
 3. Set up weekly conference meeting. All
 - SM will propose every tuesday same time as this time.

Talk to you all then,
SM

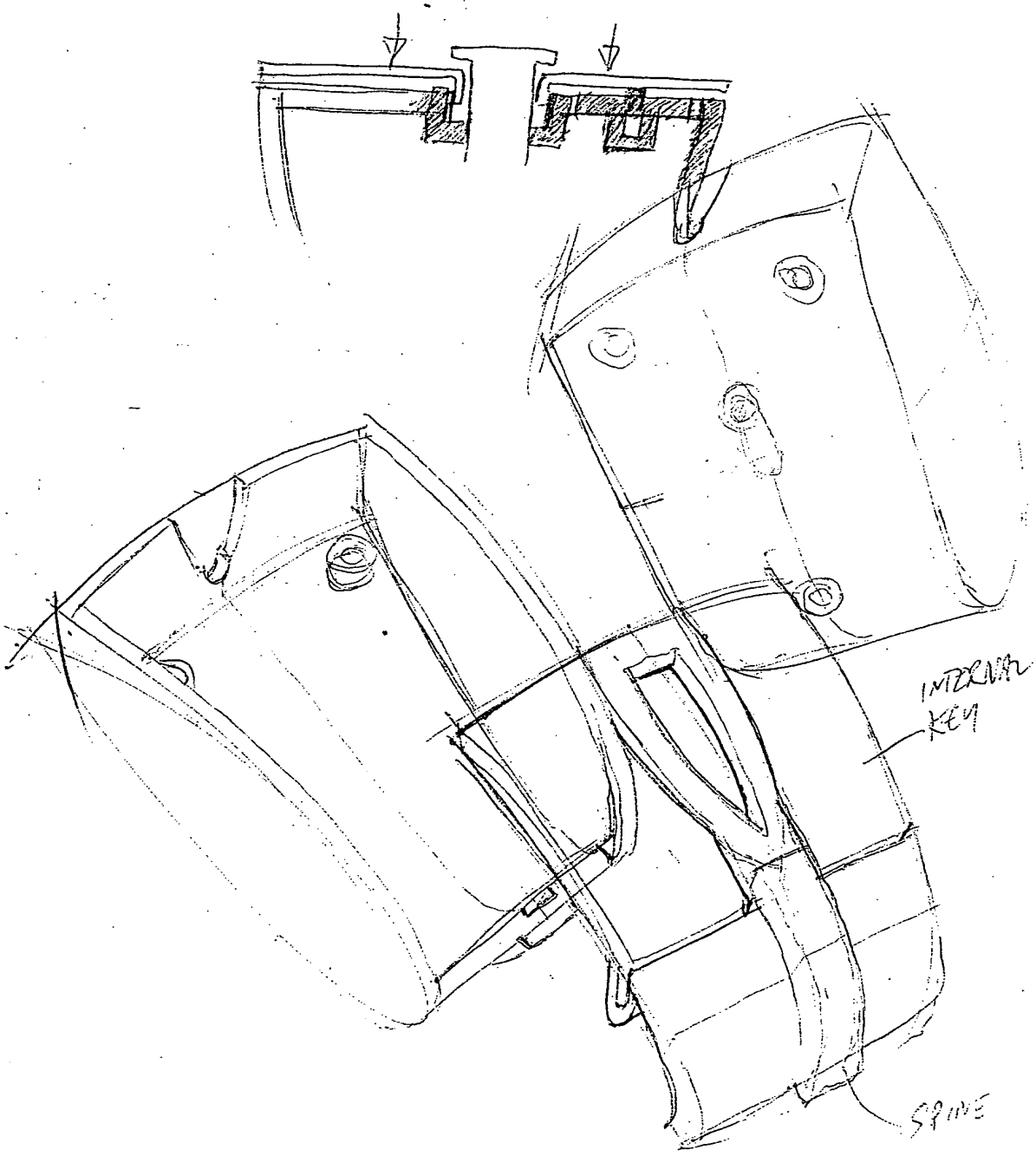
- Reference information: Discussions + AIs from last conference meeting minutes.
 - Discussions:
 1. Peter introduced in more details the 3 concept (1-1, 1-2; 2 and 3) - Peter input
 2. Metal wrap cover can be steel or aliminium - Peter input
 - Steel part is now preferred at this moment. Camera, mobile phone id using this approach in the industry.
 - The surface treatment of steel wrap may be a concern in terms of look and feel and cost, need to be identified in more details.
 3. May need to source/study steel and its treatment options. - Denis input
 4. SSR has ESD and EFTB concerns. - Jean-Luc input

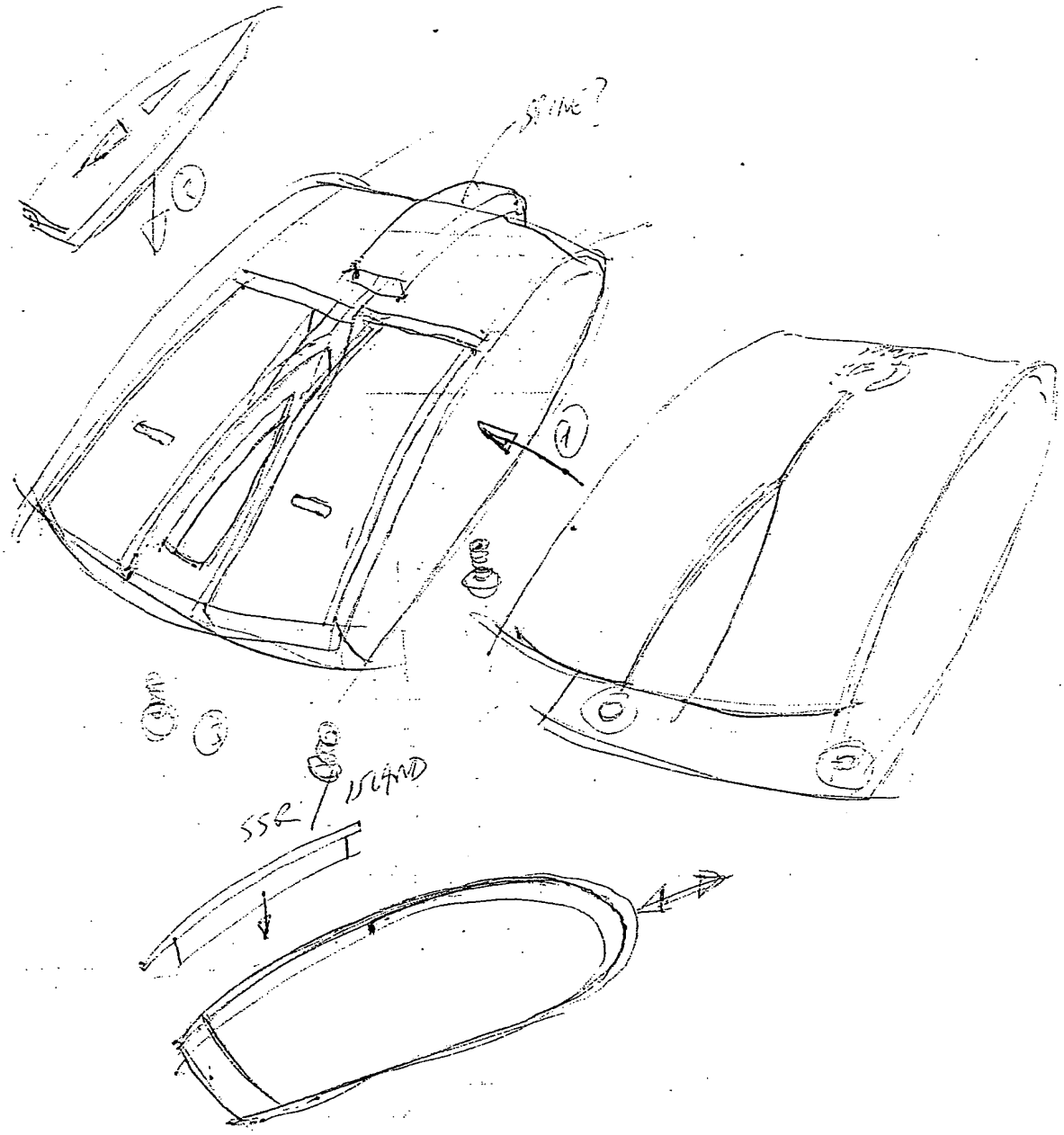
5. Thin cable has EMI and EFTB concerns. - Jean-Luc/ Jean-Claude input
 - Cable length better not exceed 60 mm. This requires marketing decision. May bundle and take Akachan's 80 mm length. - Jean-Claude
6. Steel cover with paint may let user feel cold. - Jean-Claude input
 - Peter: People may not feel it a major concern.
 - Peter: Will discuss with Jon to address more on this next week in Fremont.
7. Pouch mate'l /type selection need to be addressed. - Peter input
 - Peter: Need to be sure of its mat'l quality to achieve some good look and feel.
 - Peter: SilverFox 's can be a reference on the mat'l
 - Peter: Will be providing some smaple reference to Logitech very soon.
8. Peter will be visiting Fremont next tuesday with block model and meeting with Wolfgang and marketing people next wednesday. He will also bring the following with him: - Peter input
 - Apparanence model
 - Two extra concepts for reference as well
9. Concept model will be shipped to Fremont tomorrow, 1/19. -Peter input
10. Metal wrap, steel or Alliminium has impact over schedule. - SM input
 - Its tooling design owned by vendor, like Chi-Cheng.
 - Supplier's mfg'g plant which will support sample making located in China.
 - For example, Aliminium's requires 2.5 month(10-11 wks), for tool open -> T1.
 - Plus 1-2 wks for debugging and, 1 wk transportation time to acquire/receive next shot samples in every PQP trial runs.
11. I would like to join CC next week - Denis input
 - metal panel needs to be connected to insides
 - metal panel may have EFTB concerns I would like to see prototype (crude) testing to verify feasability ASAP
 - see ID meeting with Peter link
12. SSR has ESD and EFTB concerns. - Jean-Luc input
 Currently the 3 main issues with SSR are:
 - common mode 50Hz problem (with notebook power bricks)
 - ergonomy/usabilty, risk a miss detection and detection in the wrong direction when scrolling up (moving finger forward).
 - "fading", bad /no detection during a few seconds.
13. Metallic shell has ESD and EFT/B concerns - Jean-Luc 1/19/01
 - Need to plan to contact the metallic shell internally
 - Feasibility to be tried with protos of an existing mouse
14. Use of small lens is a concern for ESD - Jean-Luc 1/19/01
 - Need to use the small Agilent lens which means that 15KV ESD std spec. is not achievable !!! It can even be difficult to pass 8KV (min. needed for CE in Europe)
15. We may need to decide as quickly as possible product's ID to let project team has the right direction to work on . This afternoon's discussion over ME area and roughly simulated possible project scheudle shows the following information for reference: . - SM input
 - If we like to meet a PAD (US, by sea) of 8/31/2001, **we may need to decide product ID in the first week of Feb, 2001** to let project team start work immediately towards right direction.

- Action Items from this meeting:
 1. Denis to review with Peter and provide TWN team more detailed steel wrap surface treatment information to help team's research. - Denis, by 1/26
 2. Neil to send solid ProE 3D file (steel wrap) to Jack to start thinking on ME HLD. - Neil, by 1/26
 3. Neil to send Jack metal (steel) wrap drawing with tolerance and surface treatment information included. Jack can based on that to start some sourcing works. - Neil, by 1/26
 4. Jack to source to investigate into steel wrap and its treatment options. - Jack, to start the week of 1/29
 5. SM to investigate and try to ready product cost estimation after CLNY. Major features for reference will be,
 - SSR and ME roller
 - Metal or plastic wrap
 - Bottom case of double injection or single injection. - SM, the week of 1/29.
 6. Denis and Jean-Claude try to join (conferencing) in next wednesday Fremont's review meeting and share with SM and project team some information from the meeting. - Denis/Jean-Claude, 1/24
 7. Next meeting after CLNY. -SM to organize, the week of 1/29

Attn 7/2/01

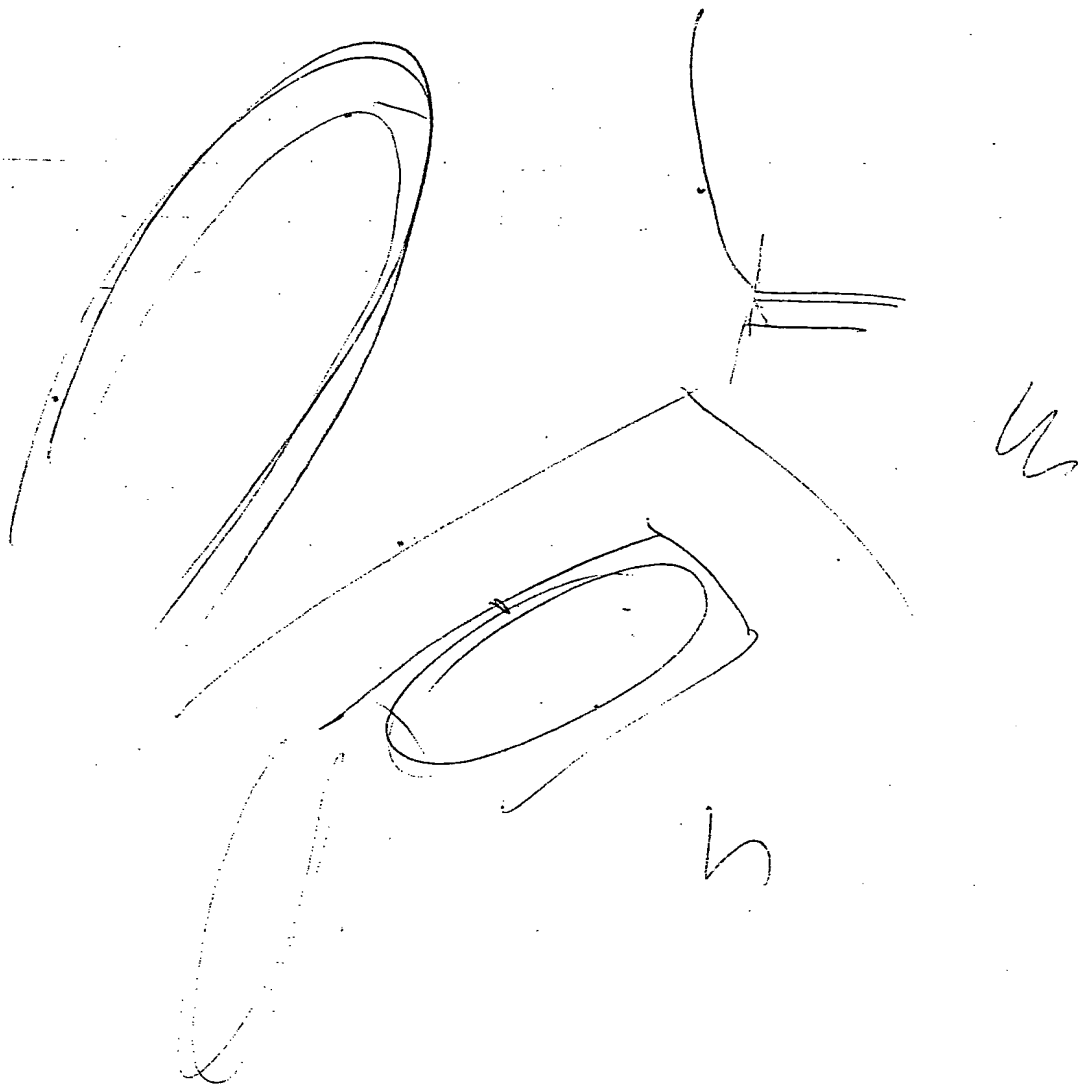
1. Keyboard Roller Assembly
2. Renew FEB 19th?
3. Legal aspects & Roller etc.



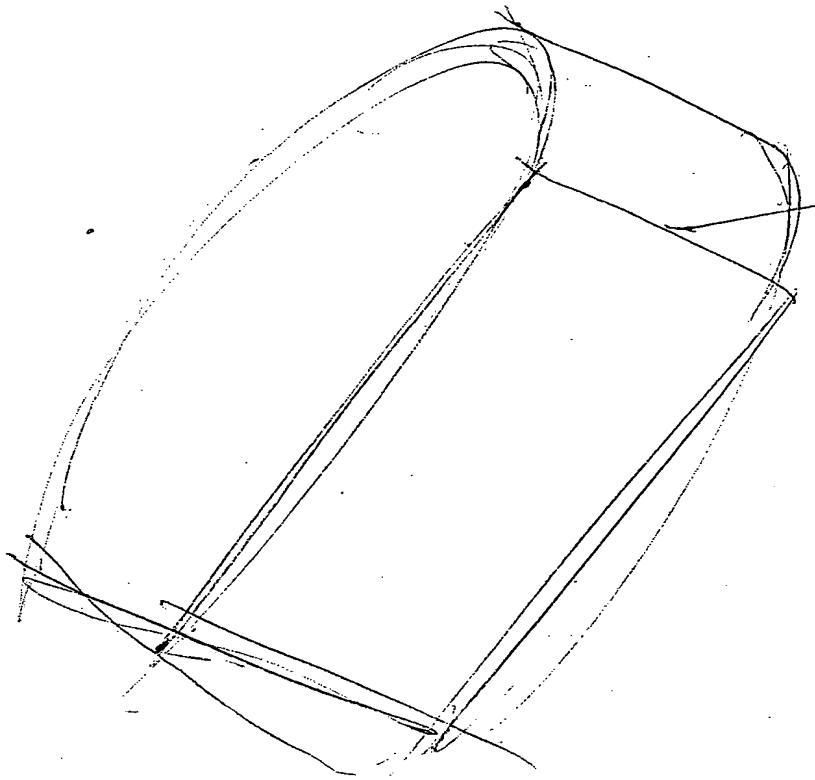

SPINE?
SSC
ISLAND

Metal panel

- Tolerance side to side
- Dressed / exposed (side) edges?



1. Metal Wrap.

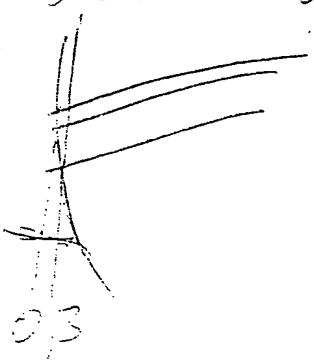


discontinuous edge? Red?

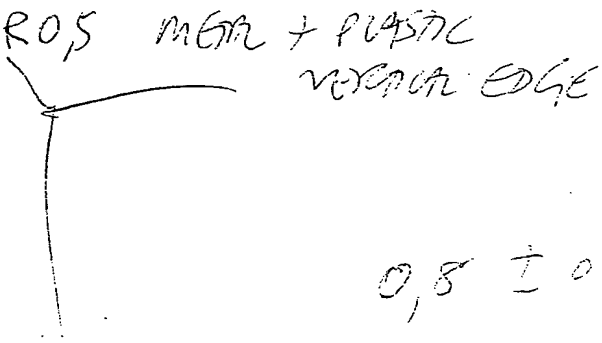
2. Fallback Car logo

— Paint? } Visibility
— Sticky?

3. Debrimed ok.



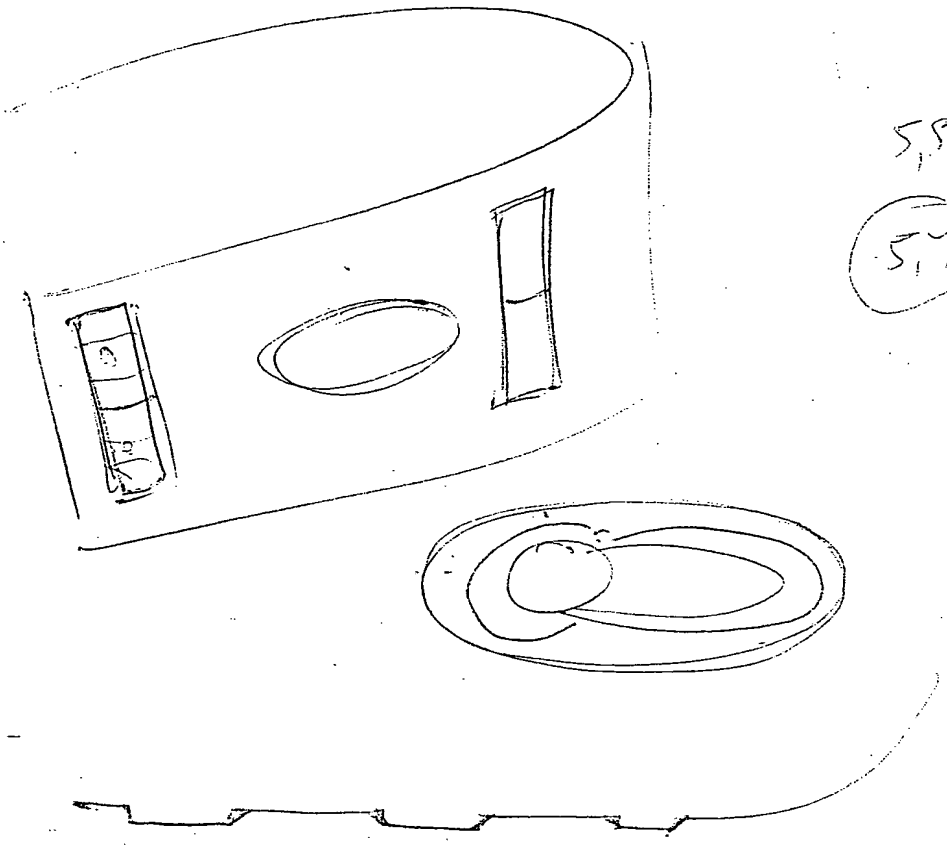
4.



0,8 ± 0,1?

0,3

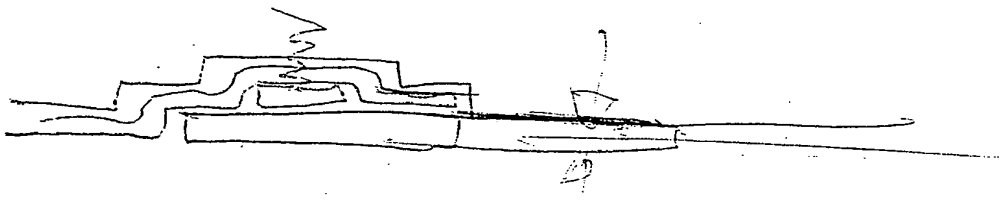
5.



5.5

5.7

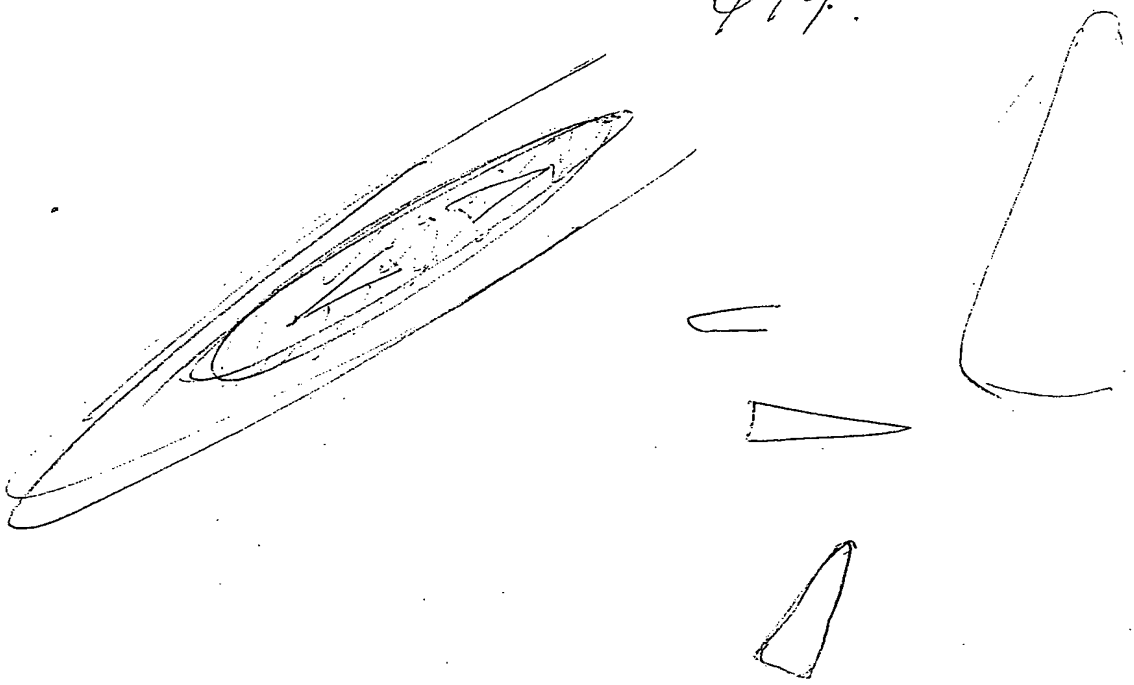


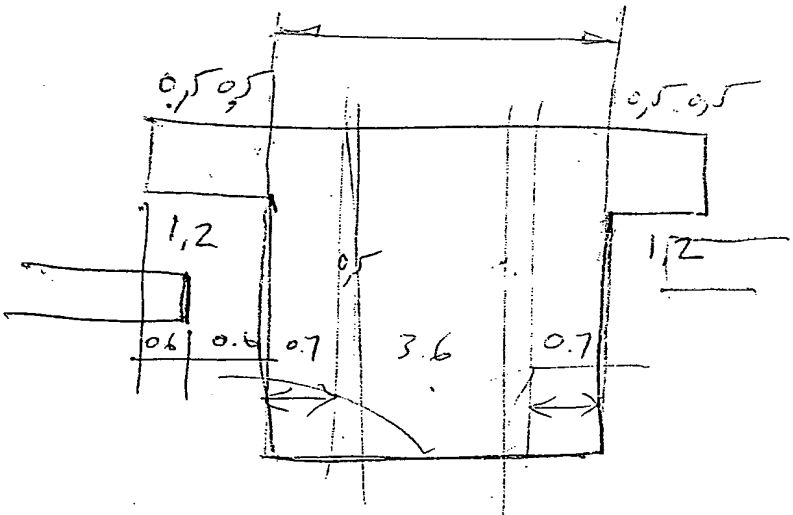


6. MASKING "STEP" FOR COATED AREA

7. Labelling? Not Coated?

6. Rake. width 3.6
ϕ19.

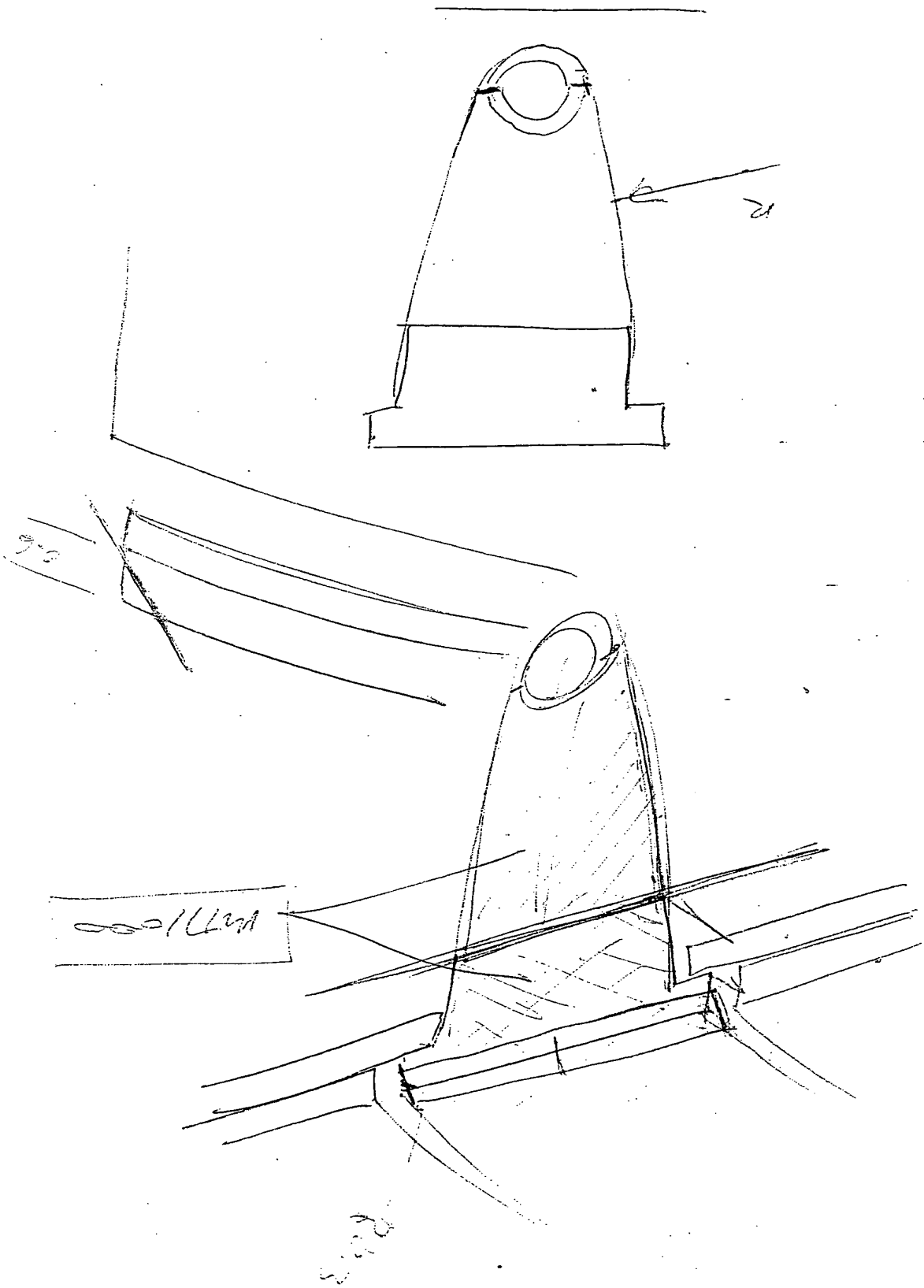




7.6
2.4
5.2
4.6
.6

4.6
1.4
2.4
8.4

7.8



Machu Response Form

Logitech CONFIDENTIAL

A Response to: ME Data Homepage

Author: Neil O'Connell Date: 02/19 01:19 PM

Key Thought: ME Task List

NOT COMPLETED

MACHU **TASK** LIST

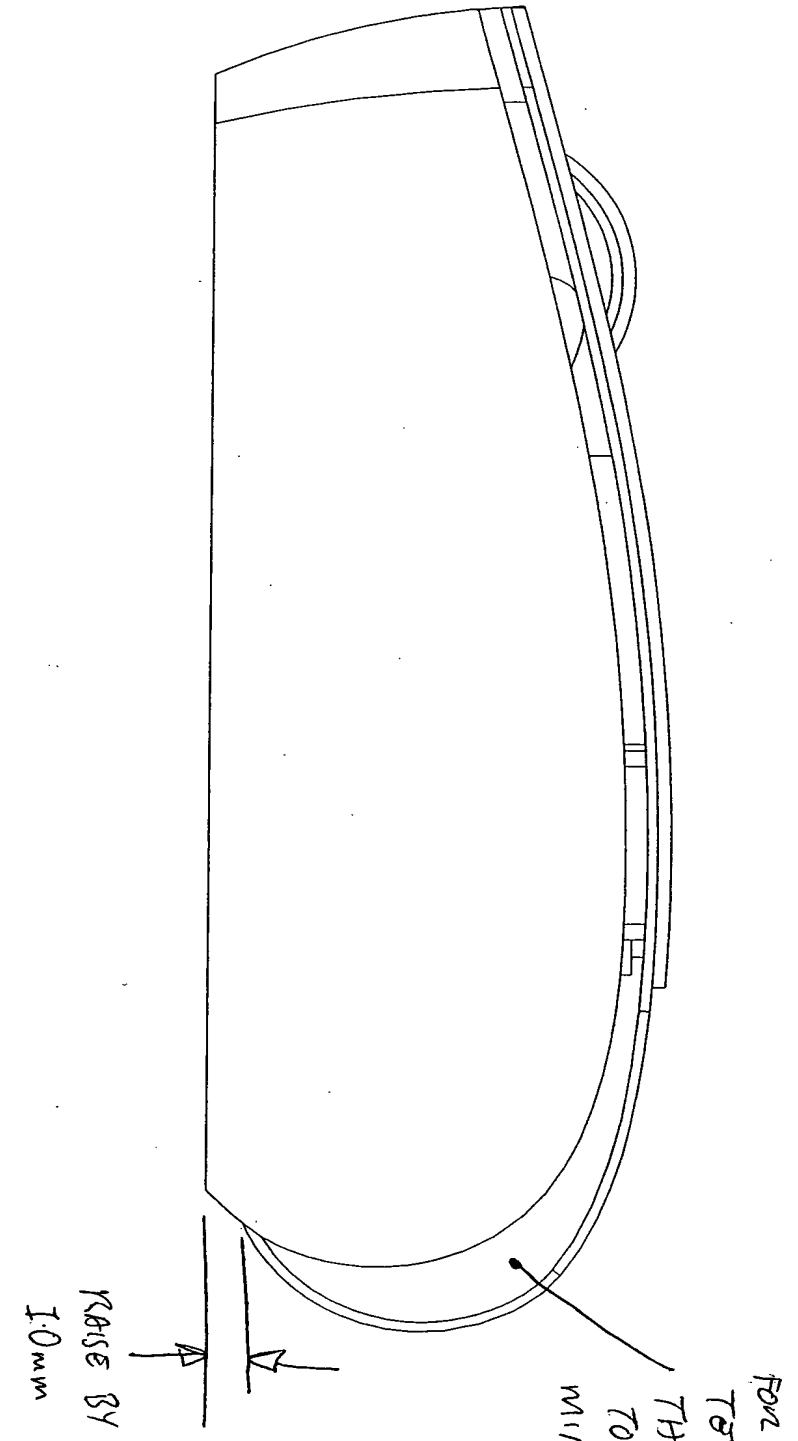
These tasks were updated on Model revision PA7

#	To Do / Done	Initiator and date	Change	Reason
1				
2				
3				
4				
5				
6				
7				
8				
9				

#	To Do / Done	Initiator and date	Change	Reason
1	To Do	Neil 19feb2001	Move agilent sensor to one side	to allow the IC to be assembled
2	To Do	Jack 20 Feb 2001	Send a layout of Agilent sensor alongside the IC to Lily	to determine if the tracks can be m
3	To Do	Jack 20 Feb 2001	Move agilent assembly back by 3.0mm	Increase space at front of assembly allow roller to move back by 3.0mn
4	To Do	Neil 20 feb2001	Increase ID at rear by 1.0mm	Increase space at front of assembly allow roller to move back by 3.0mn
5	To Do	Neil 20 feb2001	Move screw bosses to back of unit.	
6	To Do	Jack 20 Feb 2001	Source screw	
7	To Do	Neil 20 feb2001	Investigate screw boss configurations. Hooks on top case at front or rear. Maybe keyplate snaps to underside of top case. Where is the space to be gained, front or rear? Reduce number of screws.	
8	To Do	Jack 20 Feb 2001	Investigate design rules for Laser and water cutting of metal parts.	
9	To Do	Christophe	Reach agreement with Jacques Antoine on reduced drop test spec.	

		20 Feb 2001		
	To Do	Neil 20 feb2001	Check anodising impact on the strength of the mouse	
	To Do	Jack 20 Feb 2001	Add location screws to the PCB for the Agilent assembly, move agilent to one side, add microcontroller to pcb.	
	To Do	Christophe 21feb2001	Initiate a sub-project to investigate the use of a standard LED on the wheel. (now that the wheel is approaching the thickness of a combidisk, maybe we can use the same)	
	To Do	Christophe 21feb2001	Calculate cost difference between alternative switch options for the wheel click. Christophe to confirm that Marketing will accept a poorer performance switch for the wheel click (people want it, they don't use it).	table placed here. Seems that these switches are mo expensive but smaller
		Christophe 21feb2001	Carry out EFTB simulation using Cuzco	

ATTN: PETER
FROM: NOEL.



Attn. Neil O'Connell

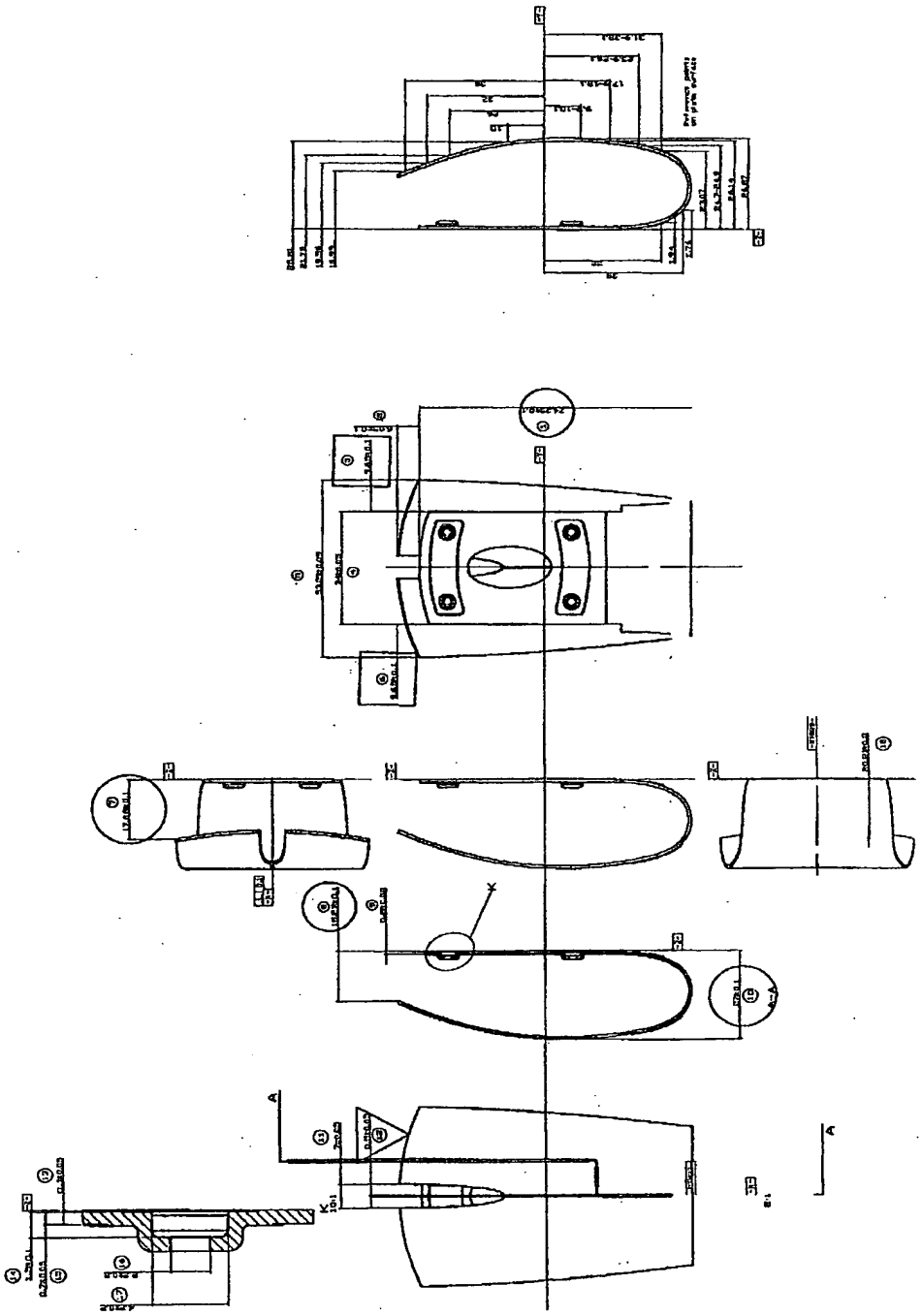
Fax No. 00353 21 4850899

ROBERT E. HUBER GmbH
Remchinger Straße 18
75203 Königsbach-Stein 1

instead of 0,5 min material thickness

+- 0,2

+- 0,5



Offers for Key panal with flat and Key panal no flat.

Dear Mr. Perot

Thank you for the inquiry. We offer in accordance to our conditions of performance and payment.

A: OFFER No. 0906 / 2001

Offer for article: Key panal **with flat**, Logitech drawing from 08.03.2001

Participation on tooling costs: DM 155.000,-- USD 71.5K
If you want to acquire property of the tooling, we charge the complete cost.
Robert E. Huber GmbH is responsable for the maintenance of the tool up to a total production quantity of 10 mio. pieces.

Description:
Progression tool in modular technic.
Cutting dies made of carbide
Electronic breaking control system.
Maximum lifetime: 10 Mio. parts.
Valid for material: Aluminium 1050 and 5005.

Lead time:
For the samples, including a sample report, for approval 18 weeks after receipt of order for toolings and parts.
First delivery of 40.000 – 50.000 pieces is 7 weeks after approval of the production samples.

Price per **DM/pcs**. CIF Shanghai, **sea freight** in lots of

		25.000	50.000	100.000
Aluminium: 5005	beadblasted+anodising	2,75 1.26 US	2,64	2,59 1.19 US
Aluminium: 5005	brushed+anodised	2,89 1.37 US	2,78	2,74
Aluminium 1050	beadblasted+anodising	2,73	2,62	2,58
Aluminium 1050	brushed+anodised	2.87	2,76	2,72

Price per **DM/pcs**. CIF Shanghai, **air freight** in lots of

		25.000	50.000	100.000
Aluminium: 5005	beadblasted+anodising	2,79	2,67	2,62
Aluminium: 5005	brushed+anodised	2,93	2,81	2,77
Aluminium 1050	beadblasted+anodising	2,77	2,65	2,61
Aluminium 1050	brushed+anodised	2,91	2,79	2,75

Terms of payment:
1. Tooling: 50% together with the order.
50% after approval of the production samples.
2. Parts: 30 days net after date of invoice.

Validity of the offer: until 30.June.2001
We hope this offer finds your approval. For further information we are at your disposition.

Best regards

ROBERT E. HUBER GMBH Remchinger Straße 18 D – 75203 Königsbach-Stein
Phone: 0049-(0)7232 – 30230 Fax.: 0049-(0)7232 – 302317 E-Mail: mail@rehuber.de

B: OFFER No. 0907 / 2001

Offer for article: Key panal **no flat**, Logitech drawing from 08.03.2001

Participation on tooling costs: DM 147.000,-- 05067.8K
If you want to acquire property of the tooling, we charge the complete cost.
Robert E. Huber GmbH is responsable for the maintenance of the tool up to a total production quantity of 10 mio. pieces.

Description:
Progression tool in modular technic.
Cutting dies made of carbide
Electronic breaking control system.
Maximum lifetime: 10 Mio. parts.
Valid for material: Aluminium 1050 and 5005.

Lead time:
For the samples, including a sample report, for approval 18 weeks after receipt of order for toolings and parts.
First delivery of 40.000 – 50.000 pieces is 7 weeks after approval of the production samples.

Price per **DM/pcs**. CIF Shanghai, **sea freight** in lots of

		25.000	50.000	100.000
Aluminium: 5005	beadblasted+anodising	2,75	2,64	2,59 1.1405
Aluminium: 5005	brushed+anodised	2,89 05067.33	2,78	2,74
Aluminium 1050	beadblasted+anodising	2,73	2,62	2,58
Aluminium 1050	brushed+anodised	2.87	2,76	2,72

Price per **DM/pcs**. CIF Shanghai, **air freight** in lots of

		25.000	50.000	100.000
Aluminium: 5005	beadblasted+anodising	2,79	2,67	2,62
Aluminium: 5005	brushed+anodised	2,93	2,81	2,77
Aluminium 1050	beadblasted+anodising	2,77	2,65	2,61
Aluminium 1050	brushed+anodised	2,91	2,79	2,75

Terms of payment:
1. Tooling: 50% together with the order.
50% after approval of the production samples.
2. Parts: 30 days net after date of invoice.

Validity of the offer: until 30.June.2001

We hope this offer finds your approval. For further information we are at your disposition.

Best regards

ROBERT E. HUBER GMBH Remchinger Straße 18 D – 75203 Königsbach-Stein
Phone: 0049-(0)7232 – 30230 Fax.: 0049-(0)7232 – 302317 E-Mail: mail@rehuber.de

C: OFFER No. 0908 / 2001

Offer for pre production samples for Key panal with flat and Key panal no flat.

Dear Mr. Perot,

Offer for pre production samples for Key panal **with flat**.

Laser cutted pieces made of Al 1050 or Al 5005; thickness 0,60 mm
Tooling costs: DM 26.500,-- US 12.5K

Price in **DM per piece**

		100	200	500
Aluminium: 5005	beadblasted+anodising	22,-- 10.1 USD	19,30	15,80
Aluminium: 5005	brushed+anodised	22,--	19,30	15,80
Aluminium 1050	beadblasted+anodising	22,--	19,30	15,50
Aluminium 1050	brushed+anodised	22,--	19,30	15,50 7.14 USD

2. Offer for pre production samples for Key panal **no flat**.

Laser cutted pieces made of Al 1050 or Al 5005; thickness 0,60 mm
Tooling costs: DM 26.500,-- US 12.5K

Price in **DM per piece**

		100	200	500
Aluminium: 5005	beadblasted+anodising	20,-- 9.2 USD	17,20	14,10
Aluminium: 5005	brushed+anodised	20,--	17,20	14,10
Aluminium 1050	beadblasted+anodising	20,--	17,20	14,10
Aluminium 1050	brushed+anodised	20,--	17,20	14,10 6.5 USD

In case of pre production samples of the two versions, the tooling costs are once 26.500,-- plus 5.200,-- DM for the seccond version.

Delivery time: 6 weeks after receipt of order.
Terms of delivery: Ex works Königsbach.
Freight and packing will be invoiced separatly.
Terms of payment: 30 days net after date of invoice.

Validity of the offer: until 30.June.2001

We hope this offer finds your approval. For further information we are at your disposition.

Best regards

ROBERT E. HUBER GMBH Remchinger Straße 18 D – 75203 Königsbach-Stein
Phone: 0049-(0)7232 – 30230 Fax.: 0049-(0)7232 – 302317 E-Mail: mail@rehuber.de



To: Denis O'Keeffe/IE/EU/LOGITECH@LOGITECH, Neil O'Connell/IE/EU/LOGITECH@LOGITECH
cc: Jack Hung/TW/AP/LOGITECH@LOGITECH, SM Lin/TW/AP/LOGITECH@LOGITECH
Fax to:
Subject: Re: Metal Panel Concepts

Hello Denis,

Feedback from both ChiaChang and ChiCheng the concern are as following;

For concept 1

Dimension and tolerance	Chia Chang	ChiCheng	Remark
FAI #1: 4.8 +/- 0.1	May have problem to keep that in parallel after bending process they suggestion have large tolerance as +/- 0.2mm	Same concern as ChiaChang suggestion have +/- 0.2mm tolerance.	
FAI #2: 4.8 +/- 0.05	No problem	No problem	
FAI #3: 58.2 +/- 0.1	No problem	No problem	
FAI #4: 12 +/- 0.1	No problem	No problem	
FAI #5: 15.1 +/- 0.1	Suggestion have +/- 0.15 tolerance	No problem	
FAI #6: 25.04 +/- 0.1	Same as item #1	Same as item #1	
FAI #7: 25.04 +/- 0.1	Same as item #1	Same as item #1	
4.8 +/- 0.05	Same concern as item #1 and suggestion have +/- 0.1 tolerance	Same concern as item #1	
9.22 +/- 0.1	May have ptolerance achieve it and suggestion have large tolerance as +/- 0.2mm	Suggestion have large tolernace as +/- 0.2mm	
24.93+/- 0.1	Same as last item	Same as last item	

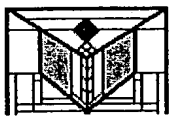
For concept 2

Dimension and tolerance	Chia Chang	ChiCheng	Remark
FAI #1: 5.8 +/- 0.1	May have problem to keep that in parallel after bending process them suggestion have large tolerance as +/- 0.2mm	Same concern as ChiaChang suggestion have +/- 0.2mm tolerance.	
FAI #2: 3 +/- 0.05	No problem to achieve tolerance.	Suggestion have large tolerance as 0.1mm	
FAI #3: 56.0 +/- 0.1	After bending may have problem to achieve tolerance them suggestion have large tolerance as +/- 0.15mm	No problem to achieve tolerance	
FAI #4: 9.3 +/- 0.1	No problem	No problem	
FAI #5: 22.6 +/- 0.1	Suggestion have large tolerance as +/- 0.15mm	Same concern as ChiaChang and suggestion have 0.2mm tolerance	
FAI #6: 25.04 +/- 0.1	Same as item #1 have large tolerance as +/- 0.2mm	Same as item #1	
FAI #7: 25.04 +/- 0.1	Same as item #1 have large tolerance as +/- 0.2mm	Same as item #1	
27.75 +/- 0.01	Maybe typing error of tolerance	Please check again	
7.48 +/- 0.1	After bending can't achieve tolerance them suggestion have large tolerance as +/- 0.2mm	Need more tolerance +/- 0.2mm	
23.2 +/- 0.1	Same as last item have large tolerance +/- 0.2mm	Same as last item	
17.2 +/- 0.1	Suggestion have large tolerance as +/- 0.15mm	Need more tolerance as +/- 0.2mm	
1.68 +/- 0.05	Suggestion have large tolerance as +/- 0.10mm and add large R to the bottom of recess and will may have white mark and break or wrinkle risk beside hole area.	Should be no problem to achieve tolerance but, may have wrinkle risk beside hole area.	

Both ChiaChang and ChiCheng recommends for all bending process especially for both concept section B-B two dimensions will be a problem to achieve tolerance +/- 0.1mm we may need consider tolerance define.

Regards,
Michael Lu.

Denis O'Keeffe



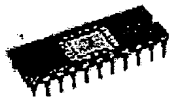
Denis O'Keeffe
03/12/01 07:30 PM

To: Michael Lu/TW/AP/LOGITECH@LOGITECH
cc: Jack Hung/TW/AP/LOGITECH@LOGITECH
Fax to:
Subject: Re: Metal Panel Concepts

Hi Michael

These files are for Quotation Only.
Please provide us with feedback form the vendors & we will update the design to follow the feedback. We will also update the metal panels today & tomorroe to follow the fine tuned ID. So I prefer not to open tooling (even test tool) for a few days

I tried to call you
I will talk to you tomorrow
Denis
Michael Lu



Michael Lu
03/12/01 11:00 AM

To: Denis O'Keeffe/IE/EU/LOGITECH@LOGITECH
cc:
Fax to:
Subject: Metal Panel Concepts

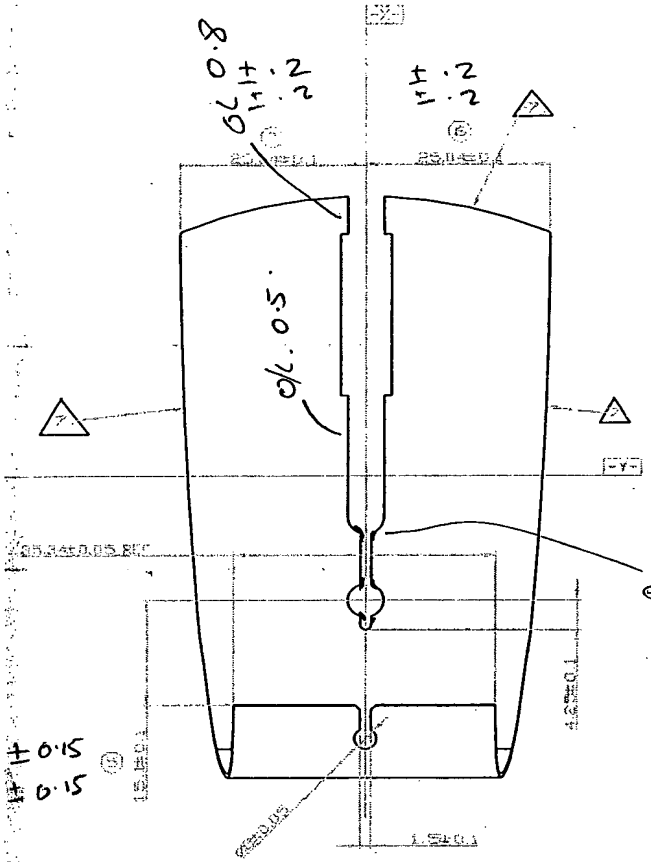
Hello Denis,

I get tooling quotation from supplier it is around NTD 170,000 for the new metal panel design. Now I just thinking we may need open punch tooling right now to understand more about new challenge of metal panel and we can't wait until every things are well analysis. So, here could you please let me know which concept 1 or 2 you will propose for tooling open?

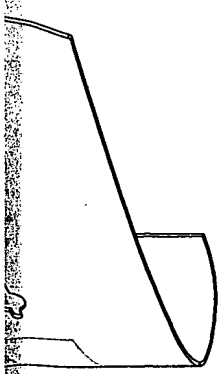
PS: For raw material 5005 H16 & 1050 H16 it is no problem supplier can find it from Japan.

Regards,
Michael Lu.

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE	ECN #
A					08 Nov 01	

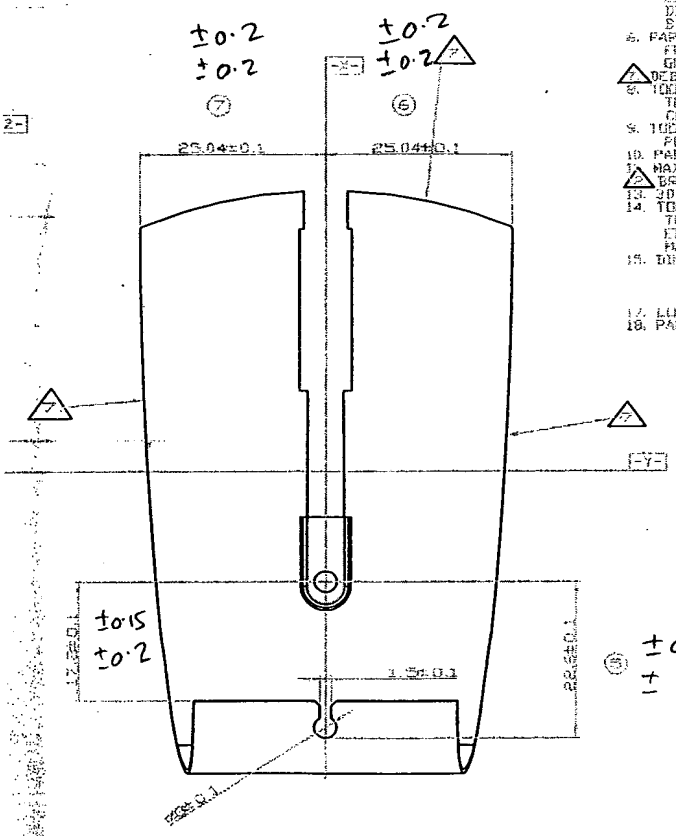


1. MATERIAL: ALUMINUM ALLOY 6061-T6 AND FINISH QUOTE FOR BOTH
2. SURFACE FINISH: BRUSHED IN DIRECTION SHOWN
3. STRAIGHT EDGES TO HAVE A STRAIGHTNESS TOLERANCE OF 0.05 FOR 0.4, AND NOT TO EXCEED 0.05 OVER ENTIRE LENGTH
4. FLAT SURFACES TO HAVE FLATNESS TOLERANCE OF
 0.05 FOR DIMENSIONS UP TO 25
 0.10 FOR DIMENSIONS BETWEEN 26 AND 100
 0.15 FOR DIMENSIONS BETWEEN 101 AND 150
 0.20 FOR DIMENSIONS OVER 151
5. ONE HALF OF A FEATURE DIMENSIONED ACROSS A CENTRE LINE AND / OR A SYMETRICAL CALL-OUT IS EQUAL TO THE DIMENSION SHOWN DIVIDED BY 2 AND IT'S TOLERANCE DIVIDED BY 2
6. PART MUST MEET THE REQUIREMENTS OF LOGITECH SPECIFICATION FOR METAL PARTS # GDI-XXXXXX-00-TVN AND GDI-XXXXXX-0-TVN-REV D
7. DEBURR ALL EDGES
8. TOOL NUMBER, PART NUMBER, REV LEVEL AND CAVITY I.D. TO BE STAMPED WHERE INDICATED CHARACTERS TO BE 1.5 HIGH x 0.25 RECESSED
9. TOOL TO BE PROPERTY OF LOGITECH , TOOL SHALL BE PERMANENTLY MARKED WITH LOGITECH AND PART NUMBER
10. PART MATES WITH TOPCASE XXXXX AND ISLAND XXXXXX-0000
11. MAXIMUM ALLOWABLE MISMATCH AFTER ASSEMBLY TO BE 0.25
12. BRUSH FINISH DIRECTION
13. 3D SURFACES TO BE REF 3D MODEL SUPPLIED BY LOGITECH
14. TOOL DESIGN TO MINIMISE BURRING. TOOL CONSTRUCTION TO CONFORM TO GOOD TOOLING INDUSTRY STANDARD PRACTICES AS STATED IN CURRENT EDITION OF STANDARDS AND PRACTICES OF STAMPED METAL PARTS MANUFACTURE BY THE METAL STAMPING INDUSTRY ORGANISATION
15. DIMENSIONS MARKED (1) TO (7) ARE FOR FIRST ARTICLE INSPECTION
 (1) TO (7) ARE FOR INCRIMINAL INSTALLATION
16. LOGITECH LOGO TO BE STAMPED 0.1mm DEEP
17. PART TO BE ANODISED TO A DEPTH OF 20MICRONS

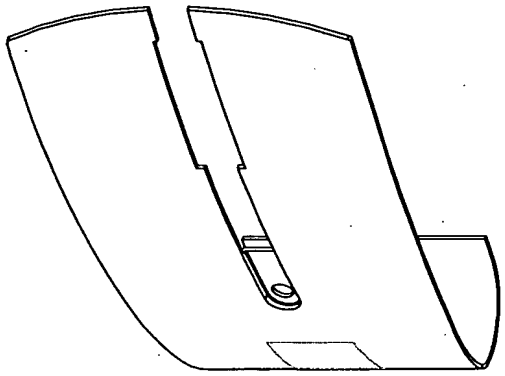


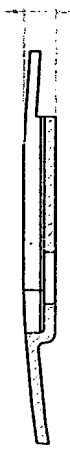
REVISIONS					
REV	DESCRIPTION	DRAWN	CHK'D	APPROVED	DATE

1. MATERIAL: 0.4MM ALUMINIUM ALLOY 5052-H32 TEMPER (OR BETTER)
2. SURFACE FINISH: BRUSHED IN DIRECTION SHOWN
3. STRAIGHT EDGES TO HAVE A STRAIGHTNESS TOLERANCE OF 0.05 PER 25mm, AND NOT TO EXCEED 0.25 OVER ENTIRE LENGTH
4. FLAT SURFACES TO HAVE FLATNESS TOLERANCE OF
 0.05 FOR DIMENSIONS UP TO 25
 0.10 FOR DIMENSIONS BETWEEN 26 AND 100
 0.15 FOR DIMENSIONS BETWEEN 101 AND 150
 0.20 FOR DIMENSIONS OVER 150
5. ONE HALF OF A FEATURE DIMENSIONED ACROSS A CENTRE LINE AND / OR A SYMETRICAL CALL-OUT TO EQUAL TO THE DIMENSION SHOWN DIVIDED BY 2 AND TWO TOLERANCE DIVIDED BY 2
6. PART MUST MEET THE REQUIRMENTS OF LOGITECH SPECIFICATION FOR METAL PARTS # SUT-XXXXXX-00-TWN AND GDS-XXXXXX-0-TWN-REV F
7. DEBURR ALL EDGES
8. TOOL NUMBER, PART NUMBER, REV LEVEL AND CAVITY I.D TO BE STAMPED APPROX WHERE INDICATED CHARACTERS TO BE 1.5 HIGH x 0.25 RECESSED
9. TOOL TO BE PROPERTY OF LOGITECH . TOOL SHALL BE PERMANENTLY MARKED WITH LOGITECH AND PART NUMBER
10. PART MATES WITH TOPCASE XXXXX AND ISLAND XXXXX-0000
11. MAXIMUM ALLOWABLE MISMATCH AFTER ASSEMBLY TO BE 0.25
12. BRUSH FINISH DIRECTION
13. 3D SURFACES TO BE REF 3D MODEL SUPPLIED BY LOGITECH
14. TOOL DESIGN TO MINIMISE BURRING. TOOL CONSTRUCTION TO CONFORM TO GOOD TOOLING INDUSTRY STANDARD PRACTICES AS STATED IN CURRENT EDITION OF STANDARDS AND PRACTICES OF STAMPED METAL PARTS MANUFACTURE BY THE METAL STAMPING INDUSTRY ORGANISATION
15. DIMENSIONS MARKED (1) TO (7) ARE FOR FIRST ARTICLE INSPECTION
 (1) TO (7) ARE FOR INCOMING INSPECTION
16. LOGITECH LOGO TO BE STAMPED 0.1mm DEEP
18. PART TO BE ANODISED TO A DEPTH OF 20MICRONS



±0.1 WRINKLE RISK





DO NOT SCALE	DRAWN	DATE	Logitech
			Knee Panel

Close | Edit | Submit for approval | Print friendly version

Logitech Confidential Attoney-Client Communication

Invention Disclosure Form

ID	200105230416/2	**Draft**
*Invention Title	Compact notebook mouse	
*Authors Names	Jon Miller, Denis O'Keeffe, SM Lin	
*Inventors Names	Jon Miller; Denis O'Keeffe	
*Business Unit	CD	
Product Unit		
Type	Utility	

Background Information for Invention:

1. Problem invention will now solve:

Compact, high performance corded mouse for mobile notebook PC users and desktop users with limited workspace area.

2. Summary of the invention (including features):
(Attaching figures and flowcharts to briefly explain the invention is encouraged).

Value, saves a problem compact saves cost_roller Keyplate aluminum

Pictures depictinig product;

Top View of keyplates.jpg Machu side view.jpg Machu 45 view.jpg

3. Benefits/advantages of the invention

Basic Legal Criteria for Invention:

1. Has the invention been disclosed to non Logitech employees without a NDA? If so, when?

2. Has or will the invention be described in a printed publication, a conference proceeding, etc.?
If so, when?

No, Not planned at this time.

3. Has or will the invention be offered for sale or on sale?
If so, when?

Yes, Product will be offered for sale.

Retail PAD is scheduled as follows (as of 23May'01)

AMR	EUR	AP	JPN
28-Sep-01	23-Oct-01	23-Oct-01	23-Oct-01

Priority Considerations for Invention:

1. Is the invention in a field without competition? If No, who are the competitors? Competition does exist in

this market:
Sanwa, Elecom & Targus - Japan market
Targus - US market
Lexon - United Kingdom

2. What other considerations that should be accounted for (e.g., market leadership or perception, new technology area, etc.)
1. Product incorporates fresh industrial design not found in competitive products or other pointing devices for PC's.
a. Unique wedge shaped design complements new generation of mobile notebook PC's
b. Metal wrap for key plates and top surface of mouse is aesthetically striking & pleasing to the eye.
2. Product encompasses functions & performance in a compact sized mouse, typically found only in larger sized mice.
a. Functions: Scroll wheel with opto technology as opposed to mechanical roller.
b. Performance: 800 dpi position accuracy.

3. What is the estimated life of the technology? For how long will Logitech use the technology?
Difficult to estimate, however, market recepection & sales success will ultimately determine the product will remain in the marketplace.

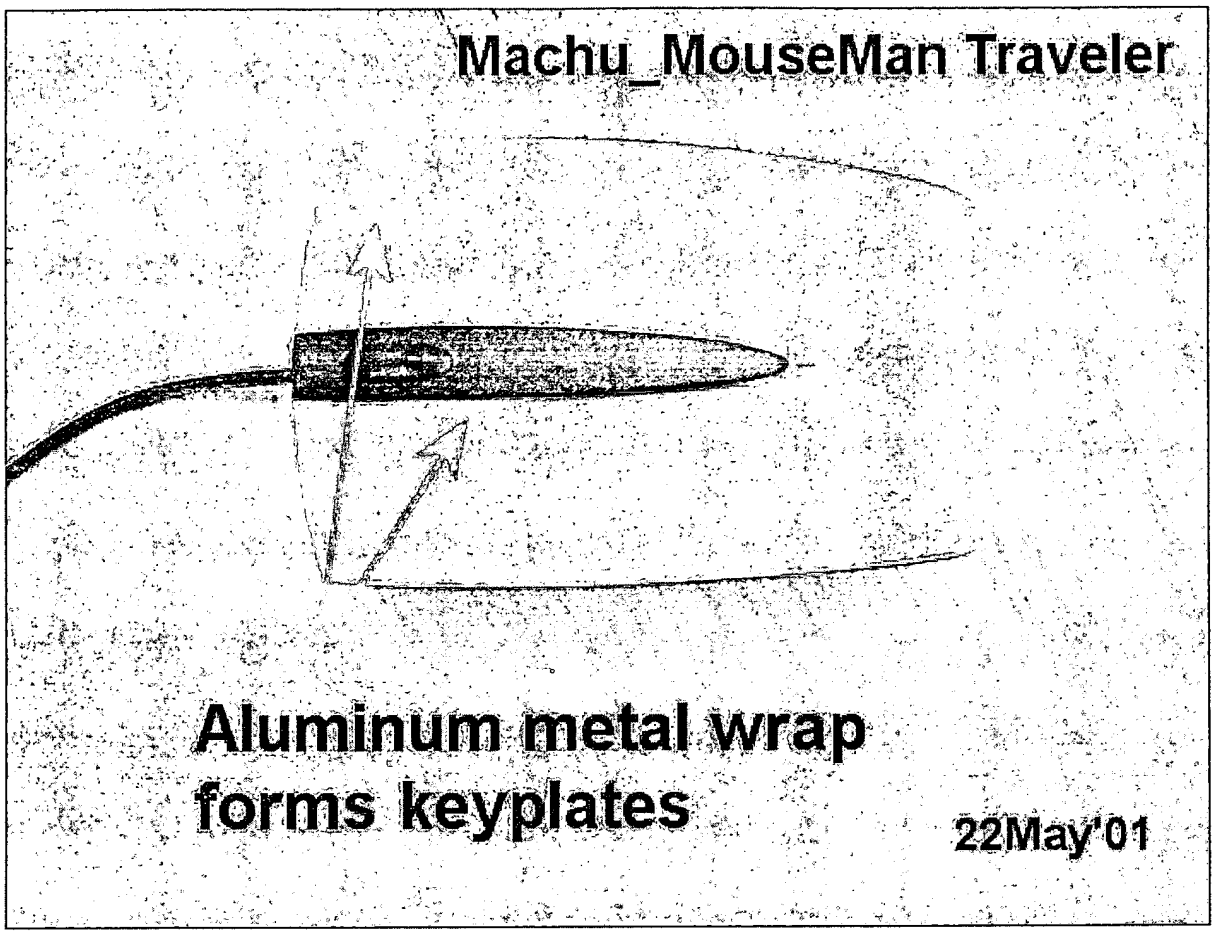
4. Will a workaround to the invention be difficult (consider time, expense, complexity)?
If No, can the description of the invention include most feasible workaround solutions?
Yes, Metal wrap for key plates and top case requires special engineering considerations on the following areas;
1. Insertion & fixing method into body of mouse. Sandwiched between top & bottom case.
2. Keyplate flexibility and keyswitch actuation forces must be within limits typically found in ABS keyplates.
3. Special surface treatments will be employed on metal wrap.
a. Wire brushing texture on top surface of metal wrap.
b. Various colors will be implemented through anodizing aluminum wrap base material.
c. Logitech logo to be engraved into metal wrap on top surface. Must not compromise mechanical characteristics of keyplate.

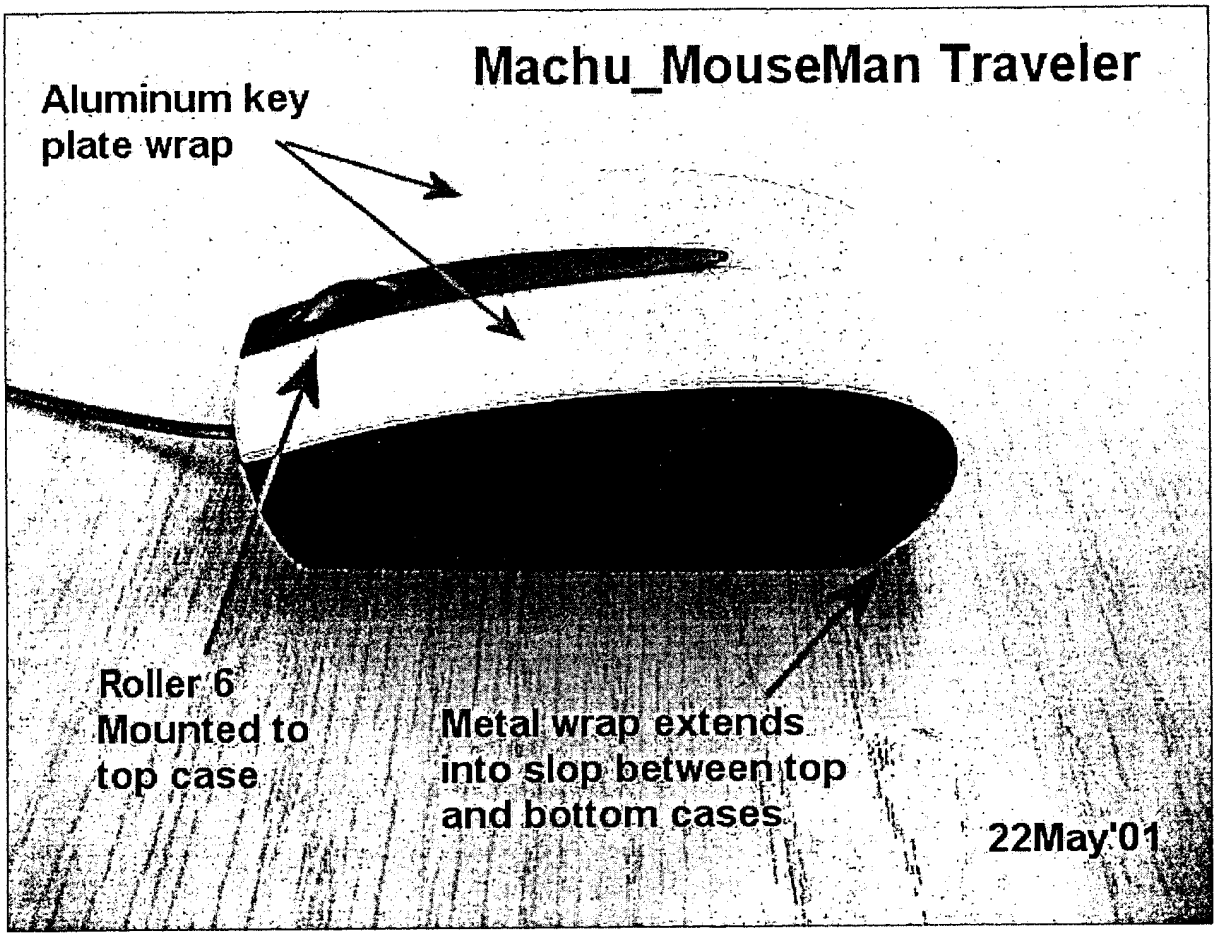
5. Will it be easy to detect infringement of the invention (e.g., would the infringement be visible)?
How can infringement most probably be detected?
Yes, Unique industrial design is not found elsewhere in the worldwide marketplace at this time.

Attachment/comments:

Created by Jon Miller on 23.May.2001
Modified by Kristine Riley on 24.May.2001

Version 1


Machu_MouseMan Traveler
Aluminum metal wrap forms keyplates
22May'01


Machu_MouseMan Traveler
Aluminum key plate wrap
Roller 6 Mounted to top case
Metal wrap extends into slop between top and bottom cases
22May'01

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